

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A glass composition for use in treatment ~~and/or prevention~~ of dental caries, the glass composition being formed by combining and melting a phosphorus oxide and at least one of Na, K, Li, or Al in oxide and/or fluoride form, the glass composition comprising the following general empirical formula, expressed in weight percent of each element:

P: 16-24

F: 5-30

O: 20-40

and at least one of Na, K, Li, or Al in an amount up to a total of 40% by weight,
wherein the glass composition releases a therapeutically effective amount of water soluble fluoride ions over time when exposed to saliva in a person's mouth.

2. (Previously Presented) The glass composition as claimed in claim 1, wherein at least one of a fluoride or an oxide of at least one glass modifier is included in the glass composition.

3. (Previously Presented) The glass composition as claimed in claim 2, wherein the fluoride of at least one glass modifier is selected from the group consisting of aluminum fluoride, sodium hydrogen fluoride, sodium fluoride, calcium fluoride, magnesium fluoride, potassium fluoride, and mixtures thereof.

4. (Previously Presented) The glass composition as claimed in claim 2, the glass composition further comprising one or more other glass modifiers.

5. (Previously Presented) The glass composition as claimed in claim 4, wherein the one or more other glass modifiers comprise at least one of calcium, magnesium or zinc.

6. (Previously Presented) The glass composition as claimed in claim 4, wherein the one or more other glass modifiers are included in an amount of up to 10% by weight.

7. (Previously Presented) The glass composition as claimed in claim 1, wherein the glass composition includes a combined weight percent of at least 16% of sodium and potassium.

8. (Previously Presented) The glass composition as claimed in claim 1, wherein aluminum is included in the glass composition in an amount of at least 3% by weight.

9. (Previously Presented) The glass composition as claimed in claim 1, wherein at least 25% by weight oxygen is included in the glass composition.

10. (Previously Presented) The glass composition as claimed in claim 1, wherein the phosphorus is included in an amount of 18-23% by weight.

11. (Previously Presented) The glass composition as claimed in claim 1, wherein at least 12% by weight of fluoride is included in the glass composition.

12. (Previously Presented) The glass composition as claimed in claim 1, wherein the glass composition provides a fluoride retention of at least 45% at a melting temperature of 650° over 45 minutes.

13. (Previously Presented) The glass composition as claimed in claim 1, wherein the glass composition has a solubility in a range of 5-10,000.

14. (Previously Presented) The glass composition as claimed in 1, wherein the glass composition is provided in powder form and has a solubility in a range of 5 to 100.

15. (Previously Presented) The glass composition as claimed in claim 14, wherein the glass composition in powder form is incorporated in a dental restorative material.

16. (Previously Presented) The glass composition as claimed in claim 15, wherein the dental restorative material is selected from the group consisting of dental amalgams, fissure sealant resins, and composite bonding materials.

17. (Previously Presented) The glass composition as claimed in claim 1, wherein the glass composition is attached to a tooth using dental cement.

18. (Currently amended) A method for the treatment ~~and/or prevention~~ of dental caries, the method comprising attaching a glass composition to a tooth to provide a fluoride releasing device and allowing the glass composition to release a therapeutically effective amount of water soluble fluoride ions over time when exposed to saliva in a person's mouth, the glass composition being formed by combining and melting a phosphorus oxide and at least one of Na, K, Li, or Al in oxide and/or fluoride form and comprising the following general empirical formula, expressed in weight percent of each element:

P: 16-24

F: 5-30

O: 20-40

and at least one of Na, K, Li, or Al in an amount up to a total of 40% by weight.

19. (Previously Presented) A method as claimed in claim 18, further comprising attaching the glass composition to the tooth using dental cement.

20. (Previously Presented) A method as claimed in claim 18, wherein the glass composition is provided in powder form and incorporated into a dental restorative material.

21. (Previously Presented) The glass composition as claimed in claim 1, wherein the glass composition further includes at least one of boron or silicon.

22. (Previously Presented) The glass composition as claimed in claim 21, wherein the boron or silicon are included in an amount up to 5% by weight.

23. (Previously Presented) A method as claimed in claim 18, wherein the glass composition further includes at least one of boron or silicon in an amount up to 5% by weight.

24. (Currently amended) A glass composition suitable for use in treating ~~and/or preventing~~ dental caries comprising, on an empirical basis, at least 16% by weight phosphorus, at least 25% by weight oxygen, 5-30% by weight fluoride, and at least one of sodium, potassium, lithium or aluminum in an amount up to a total of 40% by weight,

wherein the glass composition is formed by combining and melting a phosphorus oxide and at least one of sodium, potassium, lithium or aluminum in oxide and/or fluoride form,

wherein the glass composition releases a therapeutically effective amount of water soluble fluoride ions over time when exposed to saliva in a person's mouth.

25. (Previously presented) A glass composition as claimed in claim 24, wherein the glass composition is formed using at least one of a fluoride or an oxide of at least one glass modifier.

26. (Previously presented) A glass composition as claimed in claim 25, wherein the fluoride of at least one glass modifier comprises at least one of aluminum fluoride, sodium hydrogen fluoride, sodium fluoride, calcium fluoride, magnesium fluoride, or potassium fluoride.

27. (Previously presented) A glass composition as claimed in claim 24, further comprising at least one glass modifier.

28. (Previously presented) A glass composition as claimed in claim 27, wherein the glass modifier comprises at least one of calcium, magnesium or zinc.

29. (Previously presented) A glass composition as claimed in claim 27, wherein the glass modifier is included in an amount of up to 10% by weight.

30. (Previously presented) A glass composition as claimed in claim 24, wherein the glass composition comprises at least one of sodium or potassium in a combined amount of at least 16% by weight.

31. (Previously presented) A glass composition as claimed in claim 24, wherein the glass composition comprises at least one of sodium or potassium in a combined amount in a range of 19-26% by weight.

32. (Previously presented) A glass composition as claimed in claim 24, wherein the glass composition comprises aluminum in an amount of at least 3% by weight.

33. (Previously presented) A glass composition as claimed in claim 24, wherein the glass composition comprises aluminum in an amount in a range of 4-10% by weight.

34. (Canceled)

35. (Previously presented) A glass composition as claimed in claim 24, wherein the oxygen is included in an amount in a range of 25-35% by weight.

36. (Canceled)

37. (Previously presented) A glass composition as claimed in claim 24, wherein the phosphorus is included in an amount in a range of 17-23% by weight.

38. (Previously presented) A glass composition as claimed in claim 24, wherein the fluoride is included in an amount of at least 12% by weight.

39. (Previously presented) A glass composition as claimed in claim 24, wherein the fluoride is included in an amount in a range of 15-25% by weight.

40. (Previously presented) A glass composition as claimed in claim 24, wherein the glass composition provides a fluoride retention of at least 45% at a melting temperature of 650° over 45 minutes.

41. (Previously presented) A glass composition as claimed in claim 24, wherein the glass composition provides a fluoride retention of at least 60% at a melting temperature of 650° over 45 minutes.

42. (Previously presented) A glass composition as claimed in claim 24, wherein the glass composition has a solubility in a range of 5 to 10,000.

43. (Previously presented) A glass composition as claimed in claim 24, wherein the glass composition has a solubility in a range of 100 to 1100.

44. (Previously presented) A glass composition as claimed in claim 24, wherein the glass composition is in powder form and has a solubility in a range of 5 to 100.

45. (Previously presented) A glass composition as claimed in claim 44, wherein the glass composition in powder form comprises a portion of a dental restorative material.

46. (Previously presented) A glass composition as claimed in claim 45, wherein the dental restorative material is selected from the group consisting of dental amalgams, fissure sealant resins, and composite bonding materials.

47. (Previously presented) A glass composition as claimed in claim 24, wherein the glass composition is sized and configured for attachment to a tooth.

48. (Previously presented) A glass composition as claimed in claim 24, further including at least one of boron or silicon.

49. (Previously presented) A glass composition as claimed in claim 48, wherein the boron or silicon are included in an amount up to 5% by weight.

50. (Previously presented) A glass composition as claimed in claim 24, wherein the glass composition has a solubility rate so as to continuously release fluoride for a period of 12-36 months when attached to a person's tooth.

51. (Currently amended) A glass composition suitable for use in treating ~~and/or preventing~~ dental caries comprising, on an empirical basis, 18-23% by weight phosphorus, 20-40% by weight oxygen, 5-30% by weight fluoride, and at least one of sodium, potassium, lithium or aluminum in an amount up to a total of 40% by weight,

wherein the glass composition is formed by combining and melting a phosphorus oxide and at least one of sodium, potassium, lithium or aluminum in oxide and/or fluoride form,

wherein the glass composition releases a therapeutically effective amount of water soluble fluoride ions over time when exposed to saliva in a person's mouth.

52. (Currently amended) A glass composition suitable for use in treating ~~and/or preventing~~ dental caries comprising, on an empirical basis, 16-24% by weight phosphorus, 20-40% by weight oxygen, 5-30% by weight fluoride, at least one of sodium, potassium, lithium or aluminum in an amount up to a total of 40% by weight, and at least one of calcium, magnesium, or zinc in an amount of up to a total of 10% by weight,

wherein the glass composition is formed by combining and melting a phosphorus oxide, at least one of sodium, potassium, lithium or aluminum in oxide and/or fluoride form, and at least one of calcium, magnesium, or zinc in oxide and/or fluoride form,

wherein the glass composition releases a therapeutically effective amount of water soluble fluoride ions over time when exposed to saliva in a person's mouth.